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OEE News

Leading Canadians to Energy Efficiency at Home, at Work and on the Road

SAVING FUEL WINS FIRST PLACE

A coast-to-coast car rally leaving Victoria, B.C., in the spring of 2000 is being organized. However, the winners will not be those first across the finish line in St. John's, Newfoundland, but those driving the vehicles using the least amount of fuel to get there.

The Great Canadian Economy Run, sponsored by the Office of Energy Efficiency (OEE) in partnership with private sector organizations, will demonstrate the effect driving has on climate change.

Participants will drive new 2000 or 2001 model year vehicles supplied by automobile manufacturers. They will compete for fuel economy awards in vehicle categories covering each segment of the automotive industry. The rally will show Canadians nationwide that it's not just the type of vehicle we drive and the accessories we choose that influence fuel consumption, but that our driving habits also play a big part in the number of times we pull into the gas station for a fill-up and in the amount of carbon dioxide we release into the atmosphere, contributing to climate change.

In Victoria, St. John's and other stopover points along the way, events and exhibits will show people how fuel efficiency technology has evolved and where it's heading, introduce promising new developments in the field, and inform participants about energy-efficient driving habits that cut fuel use and reduce the amount of carbon dioxide emitted into the environment.

Lower emissions and greater fuel economy are attainable goals. The Great Canadian Economy Run is setting out to prove it.

Updates on the development of this project and news about sponsors, contests, dates, times and events associated with the rally can be found by contacting Brent Weinheimer at (613) 947-7532 or by e-mail at bweinhei@nrcan.gc.ca.

Natural Resources
CanadaRessources naturelles
CanadaOffice of Energy
EfficiencyOffice de l'efficacité
énergétique

Canada

HVAC Industry High-Efficiency

Close to 62 percent of the energy consumed in Canadian homes is used for heating and cooling. Consumers investing in residential heating, ventilating and air conditioning (HVAC) equipment can compare the efficiency levels of the products they're considering and choose the unit that has the best energy efficiency by referring to the unit's EnerGuide rating.

The EnerGuide rating, printed on the back page of manufacturers' brochures, appears as part of the EnerGuide Energy Efficiency Rating System for HVAC Equipment, an industry-managed program administered by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) in partnership with Natural Resources Canada (NRCAN). Under the program, HVAC manufacturers agree to rate the energy efficiency of residential gas furnaces, central air conditioners and air-to-air heat pumps. Later in 2000, oil-fired furnaces will also have an EnerGuide rating.

The energy efficiency ratings of HVAC equipment are shown on a horizontal bar scale on the EnerGuide rating logo. The energy efficiency indicator allows consumers to compare the model they are considering with similar products for sale in Canada. The numbers on the scale

show the minimum efficiency level allowable for sale in Canada on the left side and the highest, most efficient rating of products sold in Canada on the right side. The energy efficiency of furnaces is measured by the annual fuel utilization efficiency (AFUE). Units with higher AFUEs are more energy-efficient than their competitors. Air conditioner energy efficiency is measured by the seasonal energy efficiency ratio (SEER). To purchase a high-efficiency model, consumers are encouraged to look to the high end of the bar scale as ratings closer to 17 indicate more energy-efficient units.

While consumers look to the rating for guidance on selecting more efficient equipment, HVAC manufacturers and dealers are supported in their efforts to promote high-efficiency heating and cooling products to their clients by another

equally important component of the program — Team HVAC. Team HVAC includes HRAI, NRCAN, energy utilities, HVAC manufacturers, contractors and dealers.

Each member of the team helps promote the sale of energy-efficient equipment through a well-defined role. HRAI ensures that all HVAC manufacturers know about and participate in the program, sets targets for the program to meet, evaluates its effectiveness, and reports sales-weighted energy efficiency data to NRCAN so it can determine whether consumers are moving toward the purchase of more energy-efficient equipment. NRCAN also supports the use of the rating and collaborates with suppliers on dealer education programs. Manufacturers submit sales data to HRAI, which it passes on to NRCAN in an aggregate format, and ensure that the correct EnerGuide rating appears in each product brochure. Manufacturers, contractors, dealers and utilities help promote high-efficiency equipment to their clients and consumers at the point of sale.

To promote the benefits of buying high-efficiency equipment to consumers, Team HVAC members can use the information and tools NRCAN provides in the HVAC Toolbox. The

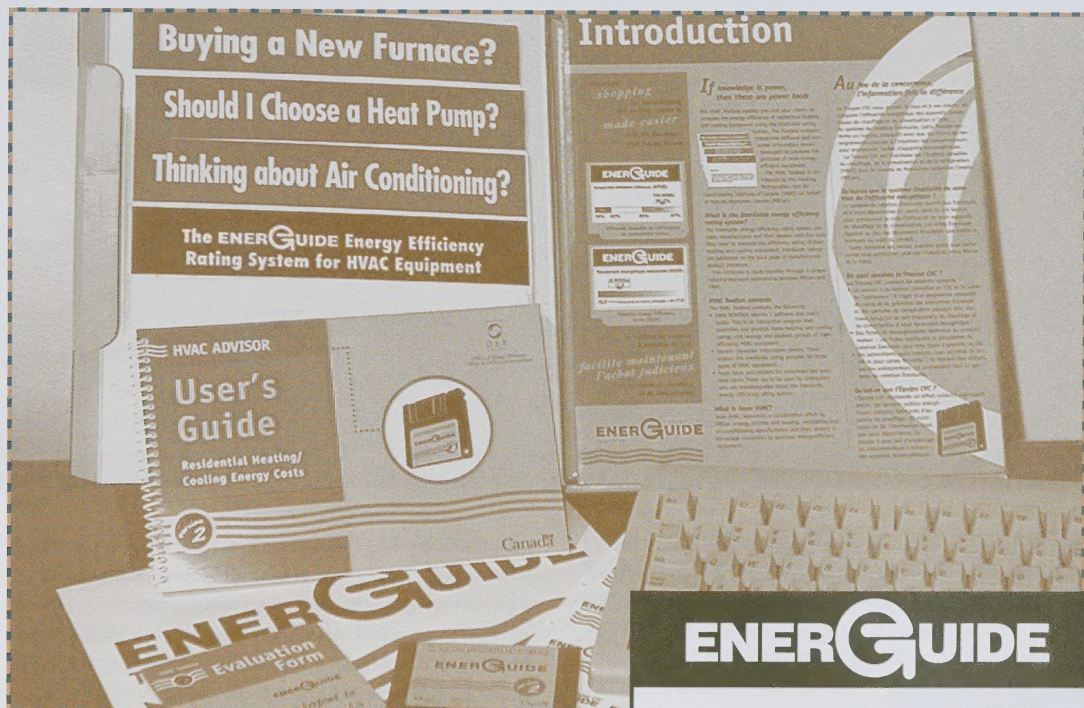
Tip!



Major home appliances account for about 16 percent of household energy use. When shopping for a new appliance, look for energy efficiency features and examine the EnerGuide label to determine which appliance is the most energy-efficient.

Promotes Equipment

The HVAC industry is taking a lead role in promoting high-efficiency equipment to its consumers.



Toolbox contains the HVAC Advisor (version 2) software program that allows contractors to quantify and predict home heating and cooling costs and payback periods for high-efficiency HVAC equipment, a user's guide that illustrates how to set up and use the software program, as well as consumer information sheets that explain the rating system and how it pertains to gas and propane furnaces, heat pumps and central air conditioners.

The HVAC industry is taking a lead role in promoting high-efficiency equipment to its consumers. The work of Team HVAC and industry members shows the positive results that can be achieved when government and industry work together to provide Canadians with the information that helps them choose products that are right for them and right for the environment.

ENERGUIDE
Annual Fuel Utilization Efficiency (AFUE)

THIS MODEL
94.0%



ENERGUIDE

Seasonal Energy Efficiency Ratio (SEER)

THIS MODEL
12.0

10.0 — Uses least energy → 17.0



CIPEC: 25 Years

The Industrial Energy Efficiency Initiative (IEEI) is a unique, voluntary alliance between Canadian industry and the federal government through Natural Resources Canada's Office of Energy Efficiency (OEE). The purpose of the IEEI is to assist

Canadian industry to stay competitive and limit greenhouse gas emissions by improving energy efficiency.

It begins with the Canadian Industry Program for Energy Conservation (CIPEC) through which Canada's manufacturing and mining industries define sector-specific energy efficiency targets, implement action plans and measure achievement. Progress is reported annually. This extraordinary partnership,

which will celebrate its silver anniversary in the year 2000, is successful because it is built on cooperation and trust. Its role is to promote positive change and to identify and reward the leaders who drive that change. CIPEC offers ideas that can improve business and economic benefits through reduced energy use.

Many CIPEC volunteers are successful business leaders – individuals with strong leadership abilities who have received significant national awards. These qualities, combined with a strong belief in the ability of business to make voluntary changes without government regulations, make these leaders most effective in attracting new industry participants. Under their leadership, companies participating in CIPEC have made important voluntary contributions toward Canada's goal of reducing the production of greenhouse gases by improving energy efficiency.

To support private sector efforts, CIPEC undertakes a number of activities that encourage the full involvement of Canadian industry. These include:

- regular sector task force meetings in which energy efficiency-related information is exchanged;

CIPEC's network includes 31 trade associations that represent more than 3000 companies and approximately 90 percent of secondary industrial energy demand in Canada.

3 of Achievement

- energy forums to enable sectors to share ideas and information;
- support for energy management seminars sponsored by the OEE;
- the development of individual sector leadership teams capable of expanding CIPEC participation within the sector;
- the creation of communications products that bolster public and industry awareness of the activities and achievements of CIPEC industries; and
- participation in energy efficiency benchmarking and other activities initiated by the OEE.

CIPEC continues to be the focal point for the manufacturing and mining response to Canada's National Action Program on Climate Change. Its network includes 31 trade associations that represent more than 3000 companies and approximately 90 percent of secondary industrial energy demand in Canada.

CIPEC's reach is spreading. By the end of 1998, it had grown to 21 task forces representing a broad spectrum of enterprises and is now building an international reputation. CIPEC is currently fielding inquiries from governments, business and industry around the world.

Tip!



Select appropriately sized pots and pans with tight-fitting lids and cook at lower temperatures to reduce energy use. A six-inch pan on an eight-inch element, for example, wastes 40 percent of the element's heat output.

"DOLLARS TO \$ENSE" ENERGY EFFICIENCY WORKSHOPS

"Energy Master Plan" Workshop

Montréal	October 12, 1999
Toronto	October 26, 1999
Rouyn-Noranda (French)	October 27, 1999
Winnipeg	November 23, 1999
St-Jean-sur-Richelieu (French)	December 1, 1999
Calgary	December 7, 1999
Vancouver	January 12, 2000
Windsor	January 18, 2000
Fredericton	February 1, 2000
Mississauga	February 2, 2000
Québec City (French)	March 7, 2000
Kingston	April 10, 2000

"Monitoring and Tracking" Workshop

Montréal	October 13, 1999
Rouyn-Noranda (French)	October 28, 1999
Toronto	November 17, 1999
Winnipeg	November 24, 1999
St-Jean-sur-Richelieu (French)	December 2, 1999
Sudbury	December 8, 1999
Vancouver	January 18, 2000
Calgary	January 19, 2000
Moncton	February 8, 2000
Toronto	February 15, 2000
Regina	March 21, 2000
Québec City (French)	March 21, 2000
Kingston	April 11, 2000
Montréal (French)	April 17, 2000
Halifax	May 16, 2000
Victoria	June 6, 2000
St. John's	June 12, 2000

"Spot the Energy Savings Opportunities" Workshop

Toronto	November 25, 1999
Sudbury	December 9, 1999
Calgary	January 25, 2000
Trois-Rivières (French)	January 25, 2000
Toronto	February 16, 2000
Moncton	March 15, 2000
Québec City (French)	March 22, 2000
Montréal (French)	April 18, 2000
Ottawa	April 19, 2000
Winnipeg	May 9, 2000

New OEE Workshop:

"SPOT THE ENERGY SAVINGS OPPORTUNITIES"

Where should you start when looking for energy savings opportunities? The simple answer is to look for where the energy is most expensive – at the point of end-use.

Adding to its highly successful "Dollars to Sense" workshop series – which includes the "Monitoring and Tracking" and the original "Energy Master Plan" workshops – the OEE has now developed its new "Spot the Energy Savings Opportunities" workshop.

Did you know that the incremental cost of an energy-efficient motor versus a regular motor may be paid for by the incremental change in efficiency? At the "Spot the Energy Savings Opportunities" workshop, solutions such as this are identified in a checklist of opportunities. Learn how to save on the energy consumption of fans, pumps, boiler systems and even building envelope systems. Don't delay – sign up now for the workshop nearest you. Refer to the workshop schedule and fax the OEE at (613) 947-4121.

Tip!



Turn off your car engine when waiting for someone. Ten seconds of idling uses more fuel than restarting the engine.

This headline might have read "Missed it by that much," Agent 86's best-known phrase from the popular 1960s TV show *Get Smart*. But VersaCold Group isn't missing much with its new energy efficiency program, called the "Maxwell Smart Program." "Maxwell" refers to maximizing the company's resources through better operating practices, and "Smart" refers to the most up-to-date energy-efficient technology for retrofits and new construction. The success of this program ensures that the Maxwell Smart Program will be a part of VersaCold's operating procedures for the life of the company.

In January 1998, VersaCold's engineering department set an aggressive energy conservation goal. The company set out to reduce energy costs by 10 percent in each of 1998 and 1999, for a 20 percent reduction of \$1.7 million from an \$8.5 million annual energy bill. As of January 1999, VersaCold had reduced its year-to-date energy costs by 10 percent or, \$863,177.

VersaCold attributes part of its success to its attendance at the "Dollars to Sense: The Energy Master Plan" workshop in May 1998 and the "Dollars to Sense: Monitoring and Tracking" workshop in December 1998. The company also held a two-day monitoring and tracking workshop at its Calgary facilities in March 1999 with Natural Resources Canada (NRCAN) staff on hand.

Rodney White, an engineering technologist at VersaCold, attended the workshop in Calgary. "I thought it was great," he said. "We are trying to implement a monitoring and tracking program through the NRCAN model because we think the NRCAN model is a great set-up."

Mr. White wanted to get more people at VersaCold involved in energy efficiency. To suit VersaCold's specific needs, the workshop was tailored toward cold storage and industrial refrigeration and included handouts on industrial cold storage from the Netherlands-based Centre for the Analysis and Dissemination of Demonstrated Energy Technologies (CADET).

VersaCold Embarks on Maxwell Smart Program

The second day featured an in-house energy workshop where energy managers were provided with an Employee Awareness Toolkit. VersaCold plans to make each of its cold storage warehouses its own energy account centre, making each facility responsible and accountable for its own energy use.

"When one person was looking after 23 warehouses, it was a big responsibility," explained Mr. White. "This way, we will get more done. We have been impressed with the energy results to date, and we expect to see better results in the future."

VersaCold Corporation is Canada's largest public refrigerated warehousing company and ranks fifth in North America. It owns and operates 23 strategically located warehouses that have a total of nearly 1.5 million m³ (55 million cu. ft.) of capacity, from Vancouver to Montréal. The company provides food processing, refrigerated storage, transportation and logistics services to more than 1500 food industry customers and manages approximately 2000 loads of refrigerated freight every month.

As of January 1999, VersaCold had reduced its year-to-date energy costs by 10 percent, or \$863,177.

Turning Energy Dollars i – and a Healthier Planet

The Canadian College of Health Service Executives (CCHSE) is taking its partnership with the Energy Innovators Initiative very seriously. For the CCHSE, its involvement is far more than just a way to encourage institutions and facilities in Canada's health care sector to save energy dollars and improve the bottom line. As CCHSE President Gaston Levac points out, "the goal is to make our planet a better place for our children and our grandchildren to live – a noble goal very consistent with the CCHSE's vision of 'Improved Health for Canadians.'"

Founded in 1970 and currently serving more than 3000 members throughout 18 regional chapters, the CCHSE offers training, networking, publications and certification to Canadian health service managers and executives. The CCHSE strongly believes that excellence in health services management can be achieved through partnerships and collaborative ventures with other professional organizations and associations, health services providers, universities, governments and corporations that have a common interest in advancing leadership and research in health management. More than 80 corporations that supply products and services to Canada's health industry are also members of the CCHSE.

An CCHSE-OEE partnership will help the OEE reach decision-makers in Canada's health care sector and encourage them to join the Energy Innovators Initiative and to voluntarily promote energy efficiency at their facilities.

In addition to mounting a national mailing and telephone campaign, the CCHSE has brought together representatives from the OEE and senior health service executives from across Canada. These meetings have helped to uncover the barriers to becoming Energy Innovators and have fostered strategies to increase participation in the health care sector.

Meetings have also highlighted the need to improve the energy conservation "culture" in Canada's health care sector. Efforts will be made to recommend that energy conservation and reduced waste emissions be part of the criteria of the Canadian Council on Health Services Accreditation's guidelines. Although some participants felt that no significant progress in energy conservation could be achieved until mandated by provincial or federal law,



Canadian College of
Health Service Executives
Collège canadien des
directeurs de services de santé

others thought that health care executives will eventually recognize the benefits of reduced energy use and act voluntarily.

The CCHSE has also been working closely with the OEE to develop a new Canadian Health Care Sector – Building Energy Use Survey. This survey will provide baseline information on energy use within the sector, determine how aware the sector is of energy efficiency, and furnish information for a benchmarking best practices program for sector participants.

With this first Canada-wide energy-use database that is specific to health care, facilities will be able to compare their consumption and expenditure figures and hone their operational practices. Some 1600 questionnaires have been mailed to facilities across Canada and survey results should be available by late summer.

The CCHSE is also developing an awareness kit for organizations in the health care sector that are already Energy Innovators. This will help them develop and implement awareness campaigns, enhance corporate image, open communications within the facility and encourage suggestions and buy-in from employees.

The CCHSE-OEE Energy Efficiency Advisory Committee has recently been formed to recruit new Energy Innovators. Health care executives with strong administrative, financial and energy management backgrounds have been selected from across Canada and will work to identify barriers to

nto Health Care Dollars

With this first Canada-wide energy-use database that is specific to health care, facilities will be able to compare their consumption and expenditure figures and hone their operational practices.

joining the Energy Innovators Initiative. They will also work to develop ideas on how best to recruit new institutions for the program.

The Energy Innovators Initiative was promoted at the Saskatchewan Provincial Conference in March and at the 1999 National Healthcare Leadership Conference and Exhibition held in Québec City in June. Upcoming conferences include the Canadian Healthcare Engineering Society's Education Forum and Trade Show, September 19 to 21 in Ottawa, at which the CCHSE will cosponsor the gala banquet with Ontario Hydro Services Company. Other upcoming conferences in the health care sector include the Manitoba Provincial Health Conference in Winnipeg,

October 13 and 14, and the Ontario Hospital Association Conference in November.

In fall 1999, the CCHSE will produce the first in a series of Energy Innovators case studies that will highlight successful energy-saving practices by health care institutions across Canada.

More than 500 public and private organizations in Canada have made a commitment to use energy more efficiently. For further information on how health care facilities can start turning energy dollars into health care dollars, visit the CCHSE's web site at <http://www.cchse.org> or contact the CCHSE's Energy Efficiency Coordinator at 1-800-363-9056, ext. 36.



Successful Partnerships HIGHLIGHTED AT

The Association of Canadian Community Colleges (ACCC) and the Office of Energy Efficiency's (OEE's) Energy Innovators Initiative have once again proven the strength of their partnership at the 1st World Congress on Colleges, Polytechnics and Institutes. The conference, hosted by the ACCC and held in Québec City from May 27 to June 1, was attended by about 2000 national and international delegates.

Tip!



If you're replacing windows, look for ones with a certification label issued by the Canadian Window and Door Manufacturers' Association (CWDMA).

Part of the ACCC-OEE partnership is an Energy Efficiency Committee with representatives from both organizations and member colleges. The committee wanted to promote energy efficiency and climate change at the congress as widely as possible. It hosted two booths at the Exhibit Fair and made available case studies on Canadian colleges that have successfully implemented energy efficiency programs.



Partnership CONGRESS

In addition to the booths, best practices in energy efficiency at colleges were highlighted in a keynote session on the environment and sustainable development. The session featured the Southern Alberta Institute of Technology's (SAIT's) presentation, "Walking our Talk: The Greening of College Campuses."

The Energy Efficiency Committee also led a well-received workshop that outlined the ACCC-OEE partnership, examples of energy efficiency programs and management plans, and lessons learned.

During this workshop the energy efficiency measures at La Cité collégiale are discussed. Delegates were impressed with the utility cost avoidance achieved at

SAIT and more so by the savings generated at La Cité collégiale.

Both sessions emphasized the importance of developing tools and creative incentives for change. An example of such a tool is the Steering Committee's recently released policy paper, "Energy Contracting Options for Energy Efficiency," which takes a comprehensive look at options for managers to improve energy efficiency.

The congress was an overall success, and the OEE looks forward to continuing its partnership with the ACCC. Through these joint efforts, the two will continue to achieve their goal of improving energy efficiency and reducing greenhouse gas emissions in the college sector.

**Hotel
Association
of Canada
also a
Strong
Energy
Innovators
Ally**

The Hotel Association of Canada (HAC) has added energy efficiency to its national and international agenda. Energy Innovators has been working closely with the HAC for the past year to promote energy efficiency initiatives among its members. In addition, the HAC's international involvement has provided it with a global opportunity to promote Energy Innovators and Canada's Kyoto Commitment. In addition to the HAC, partnership agreements are also in the works with hotel associations in British Columbia, Saskatchewan and Ontario, all of which are promoting energy efficiency and Energy Innovators to their members.

11

DuPont Canada Inc.

WINNING THROUGH ENERGY CONSERVATION

Progress in energy conservation at DuPont Canada Inc. could have stopped altogether in 1997 because of constraints on personnel and capital resources. These constraints, however, have fueled DuPont's drive for taking innovative approaches in energy efficiency.

After six years of work on energy conservation, DuPont Canada Inc. is spending \$3.3 million less on energy per year. This amazing reduction in energy costs is directly attributable to the company's cumulative conservation results. All DuPont sites participate in the energy efficiency of the company as a whole. The major contributors to energy efficiency in 1997 were boiler efficiency improvements at DuPont's Maitland facility, a Diamine-recovery column, heating, ventilation and air conditioning (HVAC) improvements at the Kingston facility, and a compressor replacement at the Ajax site.

In 1998 DuPont aimed to achieve two percent per year of documented energy conservation, worth more than \$700,000 in cost savings, while stressing the need to integrate energy-saving opportunities in its business plans. The company hopes to enter into an energy performance contract project that will require no corporate financial resources and will continue its strong involvement and leadership in CIPEC's Textiles Task Force. DuPont's Kingston site, which is

more than 50 years old, has seen many changes in its operations over the years. The shutdown of an old air conditioning unit, which would have required a \$40,000 maintenance refit, is an example of energy-efficient ingenuity. An HVAC team found a way to supply the production areas with cool air by using a different unit, yet still maintain the required temperature and humidity conditions. Savings from this initiative are \$15,000 per year.

In 1993 work began on detecting and repairing leaks in compressed air equipment. Detection was accomplished using an ultrasonic "gun." Over the next three years, approximately 1000 leaks were detected and repaired, accounting for about 450 kW of compressor energy and annual savings of more than \$200,000.

A lighting retrofit program was established to reduce by one-third the 1500 kW used for lighting at the Kingston facility. The goal was to decrease the energy used for lighting at a rate of 150 kW to 200 kW per year, starting with the highest-return opportunities. These were the replacement of incandescent lamps in basement areas with mini-fluorescent and low-pressure sodium lamps with payback periods of better than 2.5 years. Over the past five years, the site has achieved more than a 500 kW reduction in lighting and is continuing

to work on retrofitting old fluorescent fixtures and ballasts to energy-efficient designs.

At the Maitland site, three large process circulating pumps had a history of motor burnouts. The operations team was in the process of considering an upgrade from 200 hp to 250 hp to avoid costly repairs and downtime. In the redesign process, however, it was discovered that proper flow characteristics could be maintained while reducing the power requirement by trimming the pump impellers. The trimmed impellers reduced the total power requirements by 57 kW for an electrical cost savings of approximately \$25,000 per year. Chronic maintenance costs for motor rewinding were also eliminated.

"Although not every textile plant has large pumps, the same principle applies to any size centrifugal pump," states Peter Chantraine, Manager, Energy and Environment, DuPont Canada Inc. "If pumps have changed service, or (if) the operation has changed, there is a good probability that the pump size is no longer suited to the process needs. Checking pump curves and impeller size is a very cheap way to reduce energy costs."

Economics and ENERGY EFFICIENCY AN ENTICING MIX

"The stakes have been raised as environmental issues, particularly climate change, have acquired a greater sense of urgency," says André Plourde, National Advisory Council on Energy Efficiency (NACEE) member and professor in both the Faculty of Business and the Department of Economics at the University of Alberta. "Using energy more efficiently," he points out, "is an attractive way of addressing at least part of Canada's greenhouse gas emissions commitments under the Kyoto Protocol."

Although improvements in energy efficiency can be costly from technological innovations and development to the actual implementation, Mr. Plourde notes that they also yield important benefits through reduced energy use and emissions. Unfortunately, while investment costs are well known and immediate, the exact benefits from increased energy efficiency are estimated and realized over time.

One of the things that Mr. Plourde would like to see during his time with NACEE is for the Office of Energy Efficiency (OEE) to assess whether its programs are adequate to meet its objectives. He is pleased that this evaluation is already underway and that "OEE officials have actively shared information and views with NACEE members."

Mr. Plourde brings a strong academic and economic background to NACEE, having graduated with a B.A. and M.A. in economics from the University of New Brunswick and a Ph.D. in economics from the University of British Columbia. He has taught at the University of Toronto and the University of Ottawa and has worked for Finance Canada as a director. Mr. Plourde is currently President of the Canadian Chapter of the International Association for Energy Economics and is on the board of editors of *The Energy Journal*.



"The stakes have been raised as environmental issues, particularly climate change, have acquired a greater sense of urgency."

CANADIANS WORKING CLIMATE

Canada held its first-ever Climate Change Trade Show on June 2 and 3 in Ottawa to coincide with Environment Week's inaugural Clean Air Day. The event was cosponsored by Natural Resources Canada and Environment Canada to showcase the efforts of Canadians working to reduce the country's greenhouse gas emissions.

In his speech to open the trade show, Natural Resources Minister Ralph Goodale told participants that Canada must "find ways to meet the climate change challenge [that] will marry strong environmental performance with strong economic performance."

At the end of the two-day event, Minister Goodale said that he was encouraged by what he saw. The 70 trade show exhibits, representing projects funded under the Public Education and Outreach component of the Climate Change Action Fund (CCAF), in addition to the displays of innovative private sector technologies and federal and provincial climate change initiatives, proved it is possible to respond to climate change in ways that are beneficial to the environment and the Canadian economy.

The trade show was only one part of the two-day event. Participants also heard speeches highlighting the objectives of the CCAF and the progress Canada is making in reaching its international climate change commitments. Participants also took part in workshops that covered topics such as innovations in climate change, climate change on the Internet and evaluating the success of climate change projects. In addition, it was announced that the CCAF will support eight new transportation-related projects to increase public awareness of the link between vehicle emissions and climate change.

Those attending the trade show also pointed out that it marked an important opportunity for them to network with people from across the country who also have a stake in climate change. Patti Leigh of Engaging Science said, "The trade show and workshops presented an

ACTIVELY COMBAT CHANGE

opportunity to share best practices, further integrate innovative approaches, and extend networks across Canada to help advance Canada's climate change projects." According to Rob Altemeyer of the Global Change Game, "The event reinforced the fact that individual initiatives make a difference when it comes to finding solutions that will combat climate change."

The trade show demonstrated that Canada is moving in the right direction on climate change. But further work still needs to be done, particularly in educating Canadians that their everyday actions do have an impact on the environment. Continuing the success of the country's achievements so far and introducing new measures that will further improve energy efficiency throughout the Canadian economy remain necessary for a sustainable energy future.



At the Climate Change Trade Show on June 2 and 3 in Ottawa, Minister Goodale indicated that one of the key climate change challenges is to find solutions that are both economically and environmentally beneficial.

New Clothes Washers SOAKING UP Less Water and Energy

ENERGUIDE

Energy consumption / Consommation énergétique

666 kWh
per year / par année
This model / Ce modèle



Uses least energy /
Consomme le moins
d'énergie

Uses most energy /
Consomme le plus
d'énergie

Similar models
compared

Standard / Ordinaire

Modèles similaires
comparés

Model number 00000000 Numéro du modèle

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A Canadian family of four uses 438 000 litres of water a year. Close to 20 percent of that water is used by the clothes washer, as the average Canadian family washes more than seven loads of laundry a week. Not only is that a lot of water down the drain, it's also a major energy loss as most of the energy used by a clothes washer is used to heat the water.

In Canada, minimum energy efficiency levels are regulated, and each new clothes washer must display the EnerGuide label, allowing for comparison of the energy consumption of all models. With all washers on the same EnerGuide labelling scale, the more energy-efficient the machine, the more appealing it becomes to the consumer in terms of energy cost savings.

In an effort to meet the growing demand created by the EnerGuide labelling system in Canada and in anticipation of higher energy efficiency levels in the United States, North American manufacturers are responding with new, improved models. Frigidaire and Maytag have produced front-loading washers and Whirlpool a top-loading model, all using less water and having a better EnerGuide rating than the average top-loader.

The Frigidaire Gallery Tumble Action washing machine uses 80 litres, or 40 percent, less water than a conventional machine, and its estimated annual energy consumption is 259 kilowatt-hours. The Gallery uses a tumble action system, instead of the more common agitator, that plunges clothes into and out of the water, pushing detergent through the clothes to get rid of dirt and stains.

Maytag's Neptune clothes washer is also a front-loader and works much the same way as the Gallery. Responding to consumer concerns about the small capacity and long cycles of front-loading models, the Neptune's capacity is 20 percent greater than that of an average conventional washer, with the same washing times as conventional

washers. It uses 40 percent less water and 65 percent less energy than standard models and has an EnerGuide rating of 333 kilowatt-hours per year.

Although front-loading machines have generally been considered more energy-efficient since the tub doesn't entirely fill with water, Whirlpool decided to increase the efficiency of the type of machine most North Americans are used to, as their surveys showed that North Americans prefer the convenience of top-loading models. With an EnerGuide rating of 474 kilowatt-hours per year, the Whirlpool Resource Saver Wash System uses Whirlpool's spray rinse system, a sensor to control water temperature and an agitator that is gentle on clothes to reduce water use by 47 percent and energy consumption by 56 percent over the company's standard models.

Canadians shopping for clothes washers and looking at EnerGuide labels to compare models now have a greater range of energy-efficient products to choose from and can buy the model that is best designed for their lifestyle while cutting down on water and energy use.

IDLING GETS YOU NOWHERE

Trucks that are left to idle while the driver is taking a rest break or unloading cargo waste fuel, are more expensive to maintain and operate and release pollutants into the environment. In fact, many fleet managers are extremely surprised when discovering that some of their vehicles idle up to 65 percent of the time. Imagine the unnecessary exhaust emissions released into the environment, not to mention the extra fuel and maintenance costs of this activity!

To inform drivers and fleet managers on the negative economic and environmental impacts of idling, the Office of Energy Efficiency's FleetSmart program has produced a booklet and poster entitled "Idling Gets You Nowhere" that describe the reasons why prolonged idling is bad business and unnecessary with today's engines and equipment. The booklet also gives real life examples of companies that have cut back on idling to become more competitive and extend fleet life.

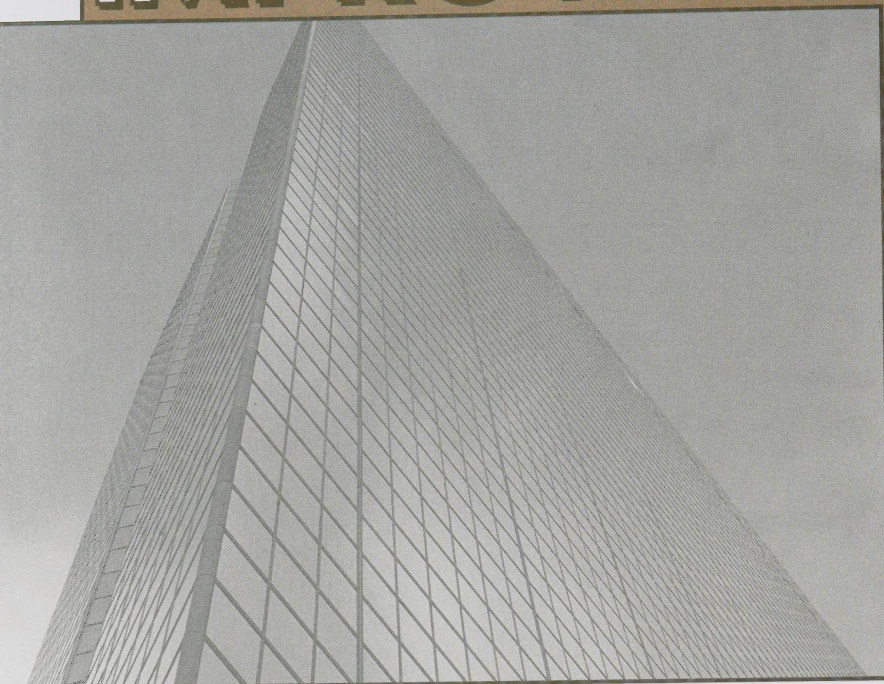
This booklet and poster, as well as publications from other FleetSmart initiatives, are available by fax at (613) 952-8169 or online at www.fleetSMART.gc.ca. The FleetSmart Web site is also a good source of information on other steps that can be taken to reduce fleet costs and the harmful effect of vehicles on the environment.

Tip!



It takes a lot of energy to heat or cool a building, so don't let interior air escape. Make sure exterior windows and doors are closed.

IMPROVING COMMERCIAL ENERGY



completed and the results were presented by the OEE to a cross section of energy professionals at a workshop conducted at McMaster University by CCEEDAC in early December 1998. They have been summarized in a July 1999 document entitled *Commercial Building Energy Use Survey Phase II – Coordination Report*.

Both the general commercial building survey (GCBS) and the large building survey (LBS) were tested to evaluate response rates and the accuracy of data collected; secondary data sources were

Collecting accurate energy-use data is necessary to help Canada measure its progress in meeting emission targets set under the Kyoto Protocol and to make accurate policy decisions. Gathering reliable data on the commercial sector has always been difficult due to its large size, its wide range of businesses, buildings and activities and its diverse range of energy-using equipment and energy-related expertise. In fact, no national commercial building energy-use survey has ever been undertaken in Canada.

To remedy this situation and to facilitate data collection, the Office of Energy Efficiency (OEE) commissioned a series of studies to develop a methodology for collecting segment energy-intensity data and segment energy-end-use-intensity data. The first of these studies was carried out in 1995 at the Canadian Commercial Energy End-Use Data and Analysis Centre (CCEEDAC), but the conceptualization of the project was first reported in a document prepared by ARC Applied Research Consultants and Engineering Interface Limited in June 1997 entitled *A Detailed Strategy for Commercial Sector Data Collection in Canada*. The last of these studies, which took the form of a major pilot test of the proposed methodology, has been

also evaluated, modelling reviewed and results and recommendations provided before moving forward on full-scale data collection.

The GCBS is intended to collect data on energy-use intensity and a limited range of building characteristics from a nationally representative survey of buildings. The results of the test confirmed that only a minimum amount of data should be collected in the GCBS – building use, square footage and energy bills – to increase the response rate and improve the accuracy of estimates. Due to the variability within the commercial sector, it was recommended that complete enumeration and surveying be tailored to the unique characteristics of each segment.

A GCBS pilot survey, examining various sampling strategies and survey methods, was carried out in enumeration areas distributed among five regions of Canada. Some of the practical sample design issues that have emerged are:

- there is no basis, as yet, in Canada for a universal commercial building list;
- special lists of buildings can be developed on a comprehensive basis for only three segments (hospitals, primary

COMMERCIAL BUILDING ENERGY END-USE DATA

and secondary schools, and colleges and universities) and four sub-segments (large shopping centres, large office buildings and warehouses, large hotels, large health [other than hospitals], and government-owned buildings) out of the sixteen segments covered by the survey;

- area sampling is required to establish the overall universe of commercial buildings; and
- establishment data rolled up to “unique municipal address” overrepresents commercial buildings by a ratio of 1.7 to 1.

After the completion of the GCBS pilot test, it was concluded that it would be necessary to take a segmented approach to the heterogeneous commercial building sector. To be successful, the survey methodology will need to be adapted to each segment. For this approach to work, it is necessary to contact associations to prepare the survey by creating building lists, contact-name lists and to collect existing energy-intensity data such as floor-space data.

The recommendations for data collection include surveying all segments (including small mixed commercial and residential and multi-residential), at least at the enumeration stage, and surveying buildings down to a minimum of 1000 square feet. The personal interview is the most acceptable form of survey methodology. Billing data from either establishment or utilities is an acceptable alternative source of energy consumption data.

The LBS is intended to collect detailed data on building characteristics, including occupancy duration, envelope, mechanical, electrical and lighting systems, and for some sectors, refrigeration and cooking. From this data and that collected in the GCBS, the energy performance of the building can be modelled to determine energy end-use intensities. Larger buildings were targeted in the pilot phase because it

was assumed that it would be easier to acquire this information on them.

After the LBS survey test, it was concluded that the LBS could only be applied where sufficient data and leverage exist to ensure a good response. These could be obtained by, for example, leveraging Energy Innovator contacts in the elementary and secondary schools segment. Data could be organized and archived at CCEEDAC and would prove valuable in benchmarking and improving the precision of modelling to determine the energy-use intensity values for representative samples.

NRCan is developing an action plan to investigate the feasibility of undertaking the GCBS and hopes to be in a position to confirm its final approach, including sample frame and methodological issues, and its potential cost by this fall. They will then look for financial sponsors. The OEE is discussing the implementation of the survey in 1999–2000 with Statistics Canada. Once the main survey is underway, NRCan will investigate how best to implement the energy end-use data collection. Specialized surveys to obtain more detailed energy end-use information may be conducted as well.

To obtain a copy of the *Commercial Building Energy Use Survey Phase II – Coordination Report*, contact André Bourbeau by fax (613) 947-4120 or by e-mail at bourbeau@nrcan.gc.ca. The report is also available online at the OEE's Web site at <http://oee.nrcan.gc.ca>.

Tip!



At least once a month, check the pressure of your tires when the tires are cold. Under-inflated tires wear faster, waste fuel and are unsafe. Having just one tire under-inflated at 26 pounds per square inch (psi) instead of a recommended 32 psi can reduce the life of the tire by 10 000 kilometres and increase fuel consumption by three percent. Keep your tires inflated to the pressure specified by your vehicle's manufacturer.

Students Taking Steps Toward an Energy-Efficient Future

In May, students from across Canada gathered in Edmonton for the 1999 Canada-Wide Science Fair. The Office of Energy Efficiency (OEE) was pleased to sponsor three awards on behalf of Natural Resources Canada for outstanding projects that demonstrated technologies and techniques relating to the efficient use of energy.

Twenty-eight projects competed for the OEE prizes in three age categories: junior, intermediate and senior. André Plourde, a member of the National Advisory Council on Energy Efficiency and a professor at the University of Alberta, invited Alex Umnikov, an M.B.A. student from Russia who has previously judged science fairs, to select the OEE prize winners. The three winners were:

- Grade 7 students Ben Leung and Steve Olynyk of Burlington, Ontario, for their project, "Power On! Sun Tracking for Maximum Efficiency";
- Grade 10 student Adrienne Mason and Grade 9 student Andrew Mason of Port Elgin,



Ontario, for their project, "Design Parameters of the Stirling Engine"; and

- Grade 11 student D. Peter Mayer and Grade 12 student Katalin Mayer of Calgary, Alberta, for their project, "Hot Start: Phase II," a device that accumulates and stores automobile engine heat for warm restart up to 20 hours later.

These three projects along with the 25 others that were entered for the OEE-sponsored awards demonstrate young Canadians' willingness to help protect the environment. Their innovative ideas coupled with their knowledge are encouraging signs for the future.

We Want to Hear from You!

We hope you've enjoyed this edition of the *OEE News*. Future editions will provide even more information on how the OEE is "Leading Canadians to Energy Efficiency."

Our goal is to update you regularly on the OEE, its programs and initiatives. But we also want to hear from you.

If you have suggestions for articles, success stories or profiles, please let us know. Letters to the editor are also welcome. Your feedback will help us make the *OEE News* an important and valued source of information on energy efficiency in Canada.

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